

Early Warnings: The Mystery of Radar in Hawaii

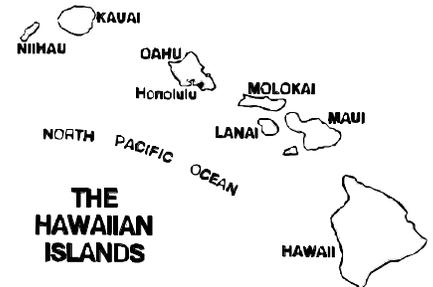
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The events leading to the Japanese attack on Pearl Harbor on the morning of December 7, 1941, have been examined and reexamined by legions of scholars. Questions relating to why and how the attack took place have tended to obscure other facets of the Pearl Harbor story including the significant roles played by the ordinary servicemen and women and the new technologies of war in the circumstances leading up to and ensuing from the events of December 7, 1941.

Even before the Japanese attack on Pearl Harbor the gravity of the situation in the Pacific was not lost on the American public. Japan's attack on Manchuria in 1931, her assault on Shanghai in 1932, and her invasion of China in 1937 turned the United States from a traditional friend of Japan into a potential enemy. Japanese actions during the 1930s posed an intolerable threat to American holdings in the Western Pacific and to the security of the United States. As the United States Government began to clarify its policy in Asia and the Pacific and to oppose Japanese expansion, relations between the two powers deteriorated.

While the diplomats argued, scientists in the laboratory were experimenting with a new technology that would change the face of warfare. This was radar (radio detecting and ranging), a system that had the ability to detect long-range objects. Radar could determine the positions of distant objects through the measurement of the time taken for the radio waves to travel to an object, be deflected and return. Starting in 1935, Britain installed a series of radar stations on the southern coast of England. These stations proved to be a major factor in winning the Battle of Britain. Beginning in 1940, England and the United States collaborated in the further development and refinement of this new technology of war.

The United States Army closely examined the potential use of radar during these years. As early as December 1939, the Army, under the direction of the Secretary of War, established an Aircraft Warning Service (AWS), using radar for the defense of American territory including the Hawaiian Islands. Colonel Wilfred H. Tetley USAF (Ret.), was given command of the newly created AWS. Under Col. Tetley's direction mobile radar detector sets were installed at Kawaiola, Waianae, Kaawa, Koko Head, Schofield Barracks, and Fort Shafter on Oahu. SCR-270 radar equipment, the latest in the Army inventory, and newly developed by the U.S. Army Signal Corps at Fort Monmouth, NJ, was installed.



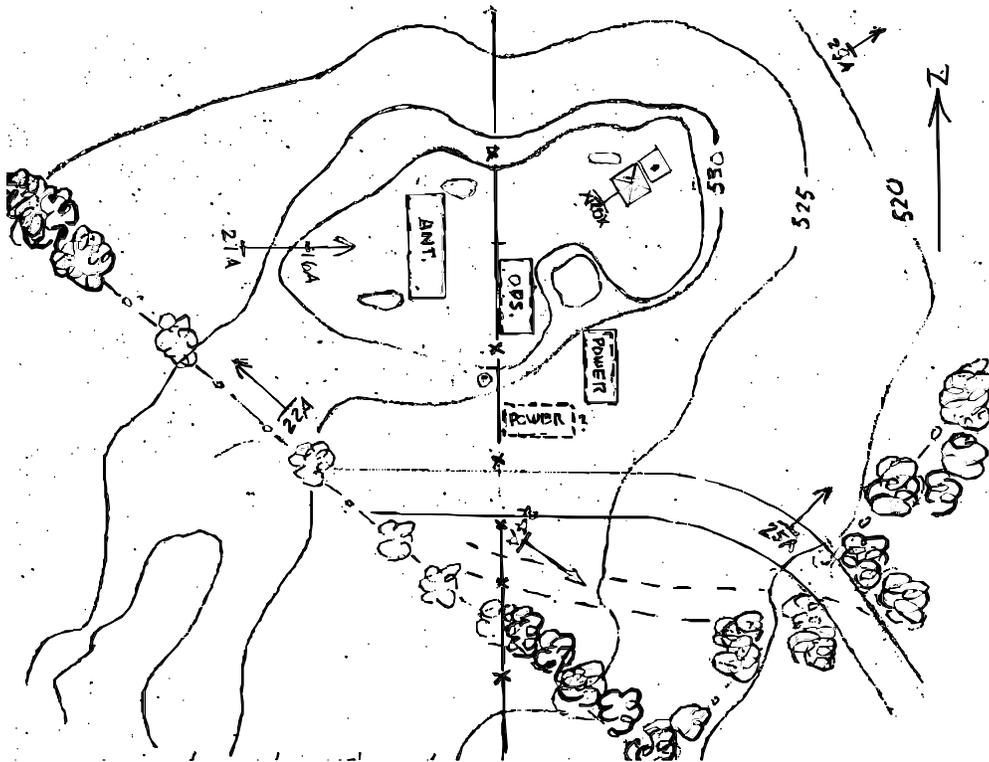
These newly installed radars appeared to hold great promise when, in September 1941, the radars at Waianae and Koko Head detected planes at a range of 85 miles. On Thanksgiving day in 1941, the same day the Japanese fleet sailed on the Pearl Harbor mission, the Schofield Barracks training set was relocated to the Opana site, on a knoll in the foothills of the Koolau Range near Kahuku Point on the Island of Oahu. By early December 1941, there were six operating radars on the Island of Oahu, including Opana.

The radar sets on Oahu were intended to be but one component of an integrated air defense system. The AWS with its six mobile long-range radar installations, the Aircraft Warning Communications net and the Aircraft Information Center were all to be tied together as one operating unit. The Army Air Corps was changing its pursuit squadrons into interceptor squadrons for a pursued Interceptor Command. The Army Anti-Aircraft Artillery batteries were undergoing modernization to employ their new SCR-268 radar. The integration of these commands and missions into one smoothly functioning unit was planned to occur automatically at the onset of

This is the latest in our series of articles that focus on the educational potential offered by our historic parks and sites. Previous articles in this series have discussed Independence National Historical Park, Dinosaur National Monument, the Pittsylvania County Courthouse, Fort Clatsop National Memorial, and the Green County Geological Museum. Through the preservation and interpretation of each of these sites the rich and diverse multi-cultural fabric of American history is sustained and communicated to the American people. The Opana Radar Site also illustrates the fact that momentous events are many times associated with modest sites.

Although the history of World War II is comprehensive, historic sites, such as the Opana Radar Site, have the potential for informing the American people of our history in a way no text book or article ever match. For many Americans, the identification and listing of these properties in the National Register of Historic Places or as National Historic Landmarks provides a valuable tool to access and understand the great events in American history. The Opana Radar Site not only commemorates an important event in the history of World War II but through its documentation tells us why it was important.

Readers of *CRM* are invited to submit articles in this series. Please submit all contributions to Harry Butowsky, *CRM*, (400), National Park Service, P.O. Box 37127, Washington, DC 20013-7127.



This sketch provided by Col. Wilfred H Tetley who, with Stephen L Johnston visited Opana, Oahu, Hawaii early in 1987 in an effort to fix the location of the SCR 270B that was in place on December 7, 1941.

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In spite of this, the significance of the sighting and the important role of radar in wartime was immediately recognized by both the Army and Navy. Privates Elliot and Lockard had detected the incoming flight of Japanese planes and had reported this fact to their superiors. Ordinary men, placed in extraordinary circumstances, they performed their duty as expected.

An even more significant aspect of the Opana radar story was the fact that the potential military implications of radar was now obvious for all to see. The use of radar gave the United States the important technological edge that was needed to redress the balance of power with Japan in the Pacific in 1942. In the months after Pearl



Opana radar site, Kawela, Hawaii, view looking north. Photo courtesy of Don Hibbard.

Harbor the United States Army and Navy were to use this technology again and again to scoop Japanese ships and planes out of the fog of war and to mount an early defense against future attacks.

The implications of the events that occurred on the morning of December 7, 1941, at the Opana Radar Station were long-lasting and far-reaching. After the lessons of Pearl Harbor were assimilated, the United States embraced the concept of large-scale government-funded research to develop the weapons needed to win a modern war. Radar was quickly followed by electronic countermeasures for air and sea combat, infrared bomb-sights, the bazooka, the proximity fuse for artillery, jet engines, missiles, the first electronic computers and

eventually the atomic bomb. The large sums of money invested in this research and development by the United States would forever change the modern world and the role of Government in the direction of the Nation's scientific and educated elite.

What happened at the Opana Radar Site on the morning of December 7, 1941, illustrated not only the immediate value of technology in modern warfare, but also served to hasten the embrace between technology and the modern state. This embrace provided the advanced weaponry that would give the United States the edge necessary to secure victory in the war. In the years after 1941, this union would evolve into what President Eisenhower called the "Military Industrial Complex."

Almost half a century after the end of World War II and two years after the end of the Cold War we are still grappling with the implications of state funded and directed research of science and technology, that had its origins, in part, in the events at the Opana Radar Site on the morning of December 7, 1941.

Final Note

Since the Opana radar was a mobile unit there is no physical evidence of the original radar installation today. The unit was never permanently anchored to the site. No monument or marker can be found on the site to identify its historic role in the history of the Pearl Harbor attack. A modern telecommunications station operated by the Navy occupies the top of the Opana Hill which still provides an unobstructed view to the sea. The telecommunications installation is adjacent to the original Opana radar site and is surrounded by a high security fence. In 1991 the Opana Radar Site was listed in the National Register of Historic Places. The Opana Radar Site is now under consideration for designation as a National Historic Landmark.